Gaia's warrior

s green heroes go, Jim Lovelock is a real oddity. He is fervently pro-nuclear, hates wind farms, once worked for the British secret service and is an admirer of the right-wing former UK prime minister Margaret Thatcher. On top of that, Lovelock, who will turn 88 in July this year, is a member of a generation many now blame for our planet's mounting ecological woes. This is no lantern-jawed hero on a Greenpeace anti-whaling mission nor a glamorous young lawyer exposing the iniquities of a mining company. This is an octogenarian — with attitude.

And it is this uncompromising outlook that holds the green movement in Lovelock's thrall, such is his passion for his planet and the quiet independence of his thinking.

Indeed, many observers believe he is one of only a handful of individuals who fully understands our planet's peril. "He is simply the most important and original scientific thinker in the world today," says John Gray, the distinguished London School of Economics philosopher. "He has changed the way we look at the Earth — and in a fundamental manner."

Lovelock is best known as the creator of Gaia theory, which states that our planet's living forms control their environment. "Life regulates the Earth's atmosphere and climate to keep it habitable," he says. "It is as simple as that." In the 1960s James Lovelock was an eco-pioneer; today he's a firm advocate of nuclear power. Meet the independent thinker who is never far from the intellectual fray.

be driven to the cooler regions of the Arctic and to a few continental oases and islands," he says.

Accepting the UK's John Collier award at the Savoy Place in London recently, Lovelock announced: "The catastrophe threatened by global heating is far worse than any war, famine, or plague in living memory; worse even than global nuclear war. Much of the lush and comfortable Earth we now enjoy is about to become a hot and barren desert."

As pronouncements of doom go, it's hard to beat. Such a cataclysmic vision also explains Lovelock's support for nuclear power. Never mind the costs of constructing reactors or the radioactive waste they produce, we have to cut emissions and only a proven, carbon-free source can save us, is his rationale. "Green concepts of sustainable development and renewable energy are far too late to have any value," he added, during his speech. Given that his lecture was sponsored by the nuclear industry, the suggestion went down well.

Not surprisingly the environment movement is less happy. Indeed, to Lovelock's legion of green admirers, his recent espousal of nuclear energy has caused some unrest. "I think Jim is a hero, but he is wrong on this one," said climate campaigner Jonathon Porritt, head of Britain's Sustainable Development Commission. "He is backing nuclear power out of desperation,

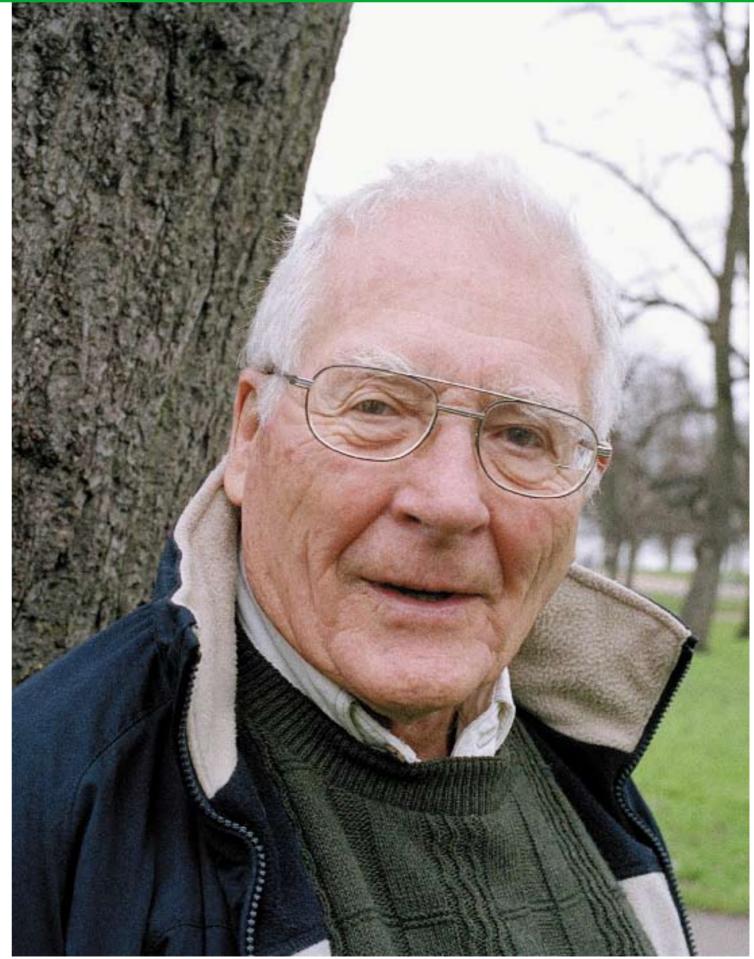
"We are at the end of our tether and the rope, whose weave defines our fate, is about to break."

And from this perspective Lovelock has come to fear for our world with a stark intensity. The billions of tonnes of carbon dioxide now being pumped into the atmosphere by our cars and power stations are so distorting Gaia, that Earth will abruptly switch to a searing hot climate that will turn our forests and grasslands into scorched scrub.

"The intolerably hot world soon to come can support only a remnant of today's burgeoning humanity and the survivors will

not because it is a rational option." For his part, Lovelock remains unrepentant. His critics, he says, are talking "liberal nonsense". This, in short, is a scientist who is unafraid to ruffle feathers.

James Ephraim Lovelock was born in July 1919, the only son of Tom and Nellie Lovelock, and raised in Brixton, a working-class area of south London. His love of science began with trips to the city's science and natural history museums and by reading stories by H.G. Wells and Jules Verne. Then, in 1932, the family **>**



» moved to Orpington at the very southern edge of London. Lovelock's life was transformed. "It meant I could go walking and cycling in the countryside," he recalls. These trips were crucial in triggering Lovelock's love of the natural world.

The young Lovelock did well at school but could not afford to go to university. Instead he took an apprenticeship with a firm of chemical consultants while also studying chemistry at evening classes, eventually winning a scholarship to go to Manchester University. After graduating, he took a PhD at the National Institute of Medical Research in London, where he spent the next two decades. This part of his career reached its zenith in the late 1950s, when Lovelock invented the electron capture detector. which can pick up traces of chemical compounds in the atmosphere. The device was revolutionary for it could pinpoint pollutants with a startling new accuracy.

"It gave us a chance to monitor the distribution of chlorinated pesticides in the environment," says Lovelock. "The results supported Rachel Carson's hypothesis that these substances were destroving birds as well as insects, and that their continued use in agriculture would lead to a silent spring." Lovelock had made his first major impact on ecology.

This expertise in measuring gas traces brought Lovelock to the attention of the US space agency, NASA, and in the 1960s he was hired to help prepare devices for its Martian lander probes. After a while he realised the atmosphere of Mars — which is in chemical equilibrium, with little being added or taken from it — strongly indicated there was no life there. "I will be very surprised if they ever find anything living on Mars," he adds today. He told his bosses, who were not amused. (The astronomer Carl Sagan, with whom Lovelock shared an office and who always maintained there was life on Mars, remained supportive.)

And, of course, it is not hard to see why NASA was irked: its multi-billion dollar interplanetary hunt for life on the red planet was simply a waste, according to Lovelock. As a feather-ruffler, he was already making his mark.

Lovelock returned to Britain and took a job with Shell until he got a call from MI5, the British secret service, who asked him to establish a laboratory at Holton Heath in Wiltshire to test and develop ideas that might have useful applications for the security services. Thus Lovelock became a scientific adviser for a national secret service, surely a first for a green guru.

However, Lovelock's real interest was the atmosphere of our own planet, which — unlike its Martian counterpart — is a chemically dynamic combination of oxygen and reactive gases. Yet our atmosphere is stable over long periods of time. Something must therefore be acting as a regulator, he realised. And as living beings are responsible for the output of these gases, it must be life itself that controls the composition of the atmosphere through a



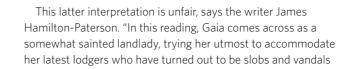
G-spot James Lovelock has applied for more than 40 patents.

left: Lovelock on his 5.7 hectare property research for NASA at the University of Houston in 1962: with his invention the electron capture detector.



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complex system of feedbacks. This is Gaia. (The name — the ancient Greek goddess of the Earth — was suggested to him by his friend, Nobel-prize winning writer William Golding.) The theory was worked out in detail with US biologist Lynn Margulis, who today describes Lovelock as "a true, original thinker". As a concept, Gaia is now firmly established in modern ecological thought. At first though, many researchers thought Gaia reeked of anthropomorphising, as if Lovelock were claiming our planet was a sentient Mother Earth struggling to maintain order in the face of human despoliation. Gaia was accused of being untestable, anti-human polemics, green politics, industrial apologetics, and even ecological Satanism. Richard Dawkins and other biologists attacked the theory as contrary to natural selection. They could not see how different species and biological processes could evolve together to produce a system like Gaia. At the same time, hippies and greenies treated Gaia as if it were a new religion, claiming her to be a real Earth goddess.



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intent on ruining her delicious mansion. Such an idea is absurd and unscientific and should not be blamed on James Lovelock."

Over the succeeding decades, Lovelock and his evolutionary opponents have reconciled their differences, restoring his reputation to the extent that he has begun to acquire accolades and awards at a startling rate. He is a Commander of the British Empire, for example, though a greater thrill came late last year in the form of a Geological Society medal — an honour. he is careful to point out, that has been accorded to few others. Charles Darwin being one of them. "I think the medal is a good measure of the way Gaia is now accepted by mainstream science," says Lovelock, who now lives with his second wife. Sandy, in a remote mill house in Devon. "I won't deny that it feels very satisfying."

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However, any such pleasure is offset by his grim vision of the future, as he reveals in his latest book, The Revenge of Gaia (see review, p67). In it Lovelock outlines, in the starkest terms, the fate that awaits Earth: billions dying, widespread extinctions, and

civilisations destroyed. "Like the Norns [the weavers of fate] in Wagner's Der Ring des Nibelungen, we are at the end of our tether and the rope, whose weave defines our fate, is about to break." states Lovelock, revealing an unexpected poetic streak.

G-spot ames Lovelock will be peaking at the Adelaide delaidefestivalofideas

One suspects this lyricism will be lost on his readers, however. The book was advertised on huge posters in the London Underground (a first for a Lovelock book) showing a couple clutching each other while gazing at an Earth in the throes of cataclysm: floods. scorched farmland and storms. It may look like typically lurid station billboard fare, but compared to other adverts for science fiction films and horror books, Lovelock's is, by far, the scariest show in town.

ROBIN McKIE is science editor of Britain's The Observer.

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